



# ENERGY POLICY UPDATE

February 2, 2015

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## CONTENTS

- ✚ [ARIZONA-RELATED](#)
- ✚ [ALTERNATIVE ENERGY & EFFICIENCY](#)
- ✚ [ENERGY/GENERAL](#)
- ✚ [INDUSTRIES & TECHNOLOGIES](#)
- ✚ [LEGISLATION & REGULATION](#)
- ✚ [WESTERN POWER](#)
- ✚ [STATE INCENTIVES/POLICIES](#)
- ✚ [GRANTS](#)
- ✚ [EVENTS](#)

## UPCOMING WEBINARS

[ENERGY STAR Webinars](#)

[U.S. Dept. of Energy Tribal Renewable Energy Webinar Series](#)

[U.S. Dept. of Energy Webinars](#)

February 3: [How a New Energy Savings Performance Contracts are Improving Energy Efficiency in U.S. Buildings](#) – Click [here](#) to register.



Like our Facebook page! Learn more about energy in Arizona, get daily posts on a variety of energy topics and use the Comment Section to tell us what you think or ask questions of our energy experts.

The Arizona Republic now has limited access. As such, links may or may not work.

## ARIZONA-RELATED

### [ASU Students Get Insider's View of Sustainability at the Super Bowl](#)

[ASU News, Jan. 28] After fans have left Super Bowl XLIX on Feb. 1, ASU students from the School of Sustainability will head up a post-Super Bowl recycling project the next day. It's an opportunity to demonstrate Arizona State University's continuous focus on sustainability. "We have the fortunate opportunity to give our students an on-hand experiential opportunity to actually understand sustainability and how it is done in regards to waste diversion by going to the stadium," said Colin Tetreault, faculty associate at the School of Sustainability. More than 20 ASU students will be sorting the recyclables from the non-recyclable items in and around the entire stadium. Most of the sorting and cleanup will be done by hand and is expected to take several hours. "The students will get to peek into the locker room, almost, of a professional organization like the NFL and how it's run from a sustainability perspective," Tetreault said. The student volunteers, ranging from undergraduates to master's students, will be treated to lunch at the stadium's midfield as a thank you for their efforts. ASU's commitment to sustainability has been a big part of its involvement in the events around the Super Bowl, and the university even has a booth at Super Bowl Central in downtown Phoenix to highlight its work on the issue. The booth is covered with solar panels, and visitors are able to play hands-on football games powered by the solar energy.

### [KYOCERA Solar Enables Municipal Buildings in Parker, AZ to Stabilize Electricity Costs for Decades](#)

*Project Will Produce 300 Megawatt Hours of Solar Power Annually*

[Business Wire, Jan. 29] Scottsdale, AZ – Kyocera Solar Inc. and the town of Parker, AZ, recently commissioned a 175-kilowatt (kW) solar energy project. The effort was developed and financed through Kyocera's in-house Power Purchase Agreement (PPA) program, which enables towns, school districts and other entities to enjoy the benefits of solar energy with no up-front costs. This innovative method of financing solar installations will transform the abundant Arizona sunshine into renewable energy to benefit Parker. The carport installations, which cover portions of the parking areas for Parker's town hall, library and senior center, will shade approximately 50 cars from solar heat while simultaneously harnessing the sun's energy. The 700 Kyocera high-efficiency solar panels and 12 SMA inverters will generate an estimated 300 megawatt hours of electricity annually to offset approximately 80% of the electricity consumed by the three buildings.

"Municipalities have a responsibility to their citizens to undertake projects that provide long-term benefits at a reasonable cost," said Timothy Edwards, Public Works Director for the town of Parker. "We are excited to work with a reliable company like Kyocera, which provided the method for reducing our energy costs with their proven solar modules and financing model. By stabilizing our town's electricity bills for decades to come, we're providing a brighter future to Parker's residents." This project, installed by Photovoltaic Systems Manufacturing of Mesa, AZ, benefits from a production-based incentive under the Arizona Public Service's "Solar for Schools and Government" program. It represents the latest U.S. solar project developed using Kyocera's in-house financing programs — which also include a 1.6 megawatt (MW) installation for the [Madison School District](#) in Phoenix. As part of a \$14 billion global enterprise that has remained continuously profitable throughout its 56-year history, Kyocera Solar Inc. is leveraging its financial strength to develop and finance projects at attractive rates. This new business model enables

## 2015 UPCOMING EVENTS

**NASEO Energy Policy Outlook Conference 2015**  
Feb. 3-6 Washington, DC

**Solar Power Generation USA**  
Feb. 4-5 San Diego, CA

**Energy, Utility & Environment Conference (EUEC) 2015**  
Feb. 16-18 San Diego, CA

**Solar Energy International Solar PV 101 Training**  
Feb. 16-20 Tucson, AZ

**Sustainability Solutions Festival**  
Feb. 16-21

**GreenBiz Forum 2015**  
Feb. 17-19 Phoenix, AZ

**RES Las Vegas**  
Mar. 9-12 Las Vegas, NV

**Natural Gas Vehicles + Infrastructure**  
Mar. 10-11 Phoenix, AZ

**GLOBALCON Conference & Expo**  
Mar. 17-18 Philadelphia, PA

**Balance-Unbalance Int'l. Conference; Water, Climate, Place: Reimagining Environments**  
Mar. 27-29 Tempe, AZ

**Arizona Science & Engineering Fair**  
Apr. 7-9 Phoenix, AZ

**Tribal Economic Outlook Conference**  
Apr. 9 Flagstaff, AZ

**Solar Summit 2015**  
Apr. 14-15 Phoenix, AZ

**Utility Solar Conference**  
Apr. 27-29 San Diego, CA

**CxENERGY 2015 Conference & Expo**  
Apr. 27-30 Las Vegas, NV

**Alternative Clean Transportation (ACT) Expo**  
May 4-7 Dallas, TX

**NARUC Utility Rate School - Western**  
May 11-15 San Diego, CA

**Solar Power Generation Mexico**

Kyocera to offer its full turn-key solar energy systems with industry-leading reliability at very competitive rates.

### LED Lights Will Illuminate Super Bowl

[Arizona Republic, Jan. 23] Football fans will see the Super Bowl in a new light this year. The football championship scheduled for Feb. 1 will be the first ever played in a dome illuminated by LED lights, which officials say will make for more vivid images on television. "It's the brightness, it's the clarity, you can see the grain of the football, you can see (everything) with much greater detail," said Mike Lorenz, president of Ephesus Lighting Inc. Behind the scenes, the LED lights installed in the fall translate to using far less energy to light up and cool down the playing field. To those watching the game in person and on TV, the lighting will create a different, more vivid visual experience, Lorenz said. "From a visual standpoint, it is excellent, it is excellent for slow motion, HDTV," said Scott Norton, director of marketing and public relations for Global Spectrum at University of Phoenix Stadium. Norton said he did not have figures on how much it cost to replace 780 metal halide fixtures at the stadium with 312 Ephesus Stadium Pro fixtures. The new lights, he said, use 310,000 watts of energy compared with 1.24 million watts needed to power the previous system.

### UA Invention Slows Water Evaporation, Generates Energy

*Assisted by Tech Launch Arizona, a floating product called Hexocover has multiple benefits and can help address the water shortage in the Southwest.*

[UA News, Jan. 22] A new technology invented at the University of Arizona offers a positive environmental impact by slowing the evaporation of water from bodies of water such as mining tailings ponds and reservoirs, while simultaneously generating solar energy. The invention, called Hexocover, consists of floating hexagonal plastic panels that sandwich 4-inch balls linked together to form a cover to prevent evaporation. The panel design addresses the need for mobility through the inclusion of a propulsion system as well as GPS, so the panels can be built to be remotely configurable. Further, when configured with solar cells, the panels can generate electricity. The cover minimizes water evaporation, the high cost to replace that water and mine energy costs. And, in the end, it minimizes the overall environmental impact of such operations. With such features, the market possibilities grew to address similar needs for other types of bodies of water, such as reservoirs and swimming pools. Developed by Moe Momayez in the Department of Mining and Geological Engineering in the UA College of Engineering and Nathan Barba, managing partner at RePower Design, Hexocover is the result of their effort to find ways to conserve water in mining tailings (remediation) ponds. The company worked with Tech Launch Arizona, the unit of the UA that commercializes inventions emanating from University research, to execute an exclusive license to bring the invention to market. The license grants RePower Design the sole right to commercialize the technology, which includes both the floating panel design as well as the solar panel integration. The company already has begun developing products based on the patent, which Tech Launch Arizona filed on behalf of the UA in the summer of 2014.

### With Federal OK, SunZia To Seek States' Approval

[Arizona Daily Star, Jan. 29] Backers of the SunZia power line in Arizona and New Mexico turn effort to state and local permits. Officials of the SunZia Transmission Project said Monday that, with federal approval in hand, they'll now turn their efforts towards seeking state and local siting approvals in New Mexico and Arizona. U.S. Interior Secretary Sally Jewell was joined Saturday by members of New Mexico's congressional delegation and other federal officials to announce the government's approval of the \$2 billion SunZia project. Supporters say the 515-mile-line cutting across south-central Arizona into new Mexico would help deliver more energy to the region and improve the reliability of the existing high-voltage regulatory grid. The dual power line proposal still needs permits from the Arizona Corporation Commission and the New Mexico Public Regulation Commission. Tucson Electric Power Co. is backing the project. Opponents of the project, concerned particularly about its potential impacts on the San Pedro River Valley, say they'll fight the state permitting efforts and consider going to court to try to overturn the federal approval. They're also hoping that a lack of demand for power will sink the project. Project officials say SunZia reached a number of milestones during its federal permitting efforts. Those include designation by the White House as one of only seven transmission projects in the country to receive accelerated permitting treatment, formal sponsorship by the New Mexico Renewable Energy Transmission Authority and initial agreement with Boston-based First Wind Energy to receive "anchor tenant" status. SunZia will have additional announcements as other developments currently underway reach completion, the company said.

May 19-20  
World Trade Center, Mexico

**Better Buildings Summit**  
May 27-29 Washington, DC

**Energy Efficiency Finance Forum**  
May 31-Jun. 2 San Francisco, CA

**Industrial Energy Tech. Conference 2015**  
Jun. 2-5 New Orleans, LA

**33rd West Coast Energy Mgmt. Congress**  
Jun. 3-4 Long Beach, CA

**14<sup>th</sup> Annual Small Business Forum & Expo**  
Jun. 16-18 Phoenix, AZ

**ASHRAE Annual Conference**  
Jun. 27-Jul.1 Atlanta, GA

**ACEEE Summer Study on Energy Efficiency in Industry**  
Aug. 4-6 Buffalo, NY

**Energy Efficiency Exchange: Federal Training & Knowledge**  
Aug. 11-13 Phoenix, AZ

**Solar Power Int'l. 2015**  
Sep. 14-17 Anaheim, CA

**ACEEE National Conference on Energy Efficiency as a Resource**  
Sep. 20-22 Little Rock, AR

**World Energy Engineering Congress (WEEC)**  
Sep. 30-Oct. 2 2015  
Orlando, FL

**Greenbuild Int'l. Conference & Expo**  
Nov. 18-20 Washington, DC

**Renewable Energy World Conference & Expo**  
Dec. 8-10 Las Vegas, NV

**ASU Sustainability Series Events**

**Green Building Lecture Series**  
Scottsdale, AZ

## ALTERNATIVE ENERGY & EFFICIENCY

### **Analysts Predict Global Renewable Energy Capacity To Double by 2025**

*Frost & Sullivan research predicts renewable energy capacity will grow by almost six per cent a year over the next decade*

[Business Green, Jan. 27] Frost & Sullivan has become the latest analyst firm to highlight the growing importance of the renewable energy industry, with the publication of a new report suggesting global renewable energy capacity will more than double over the next 10 years. The analyst firm yesterday released its *Annual Renewable Energy Outlook 2014*, which featured a central forecast that renewable energy capacity will increase from 1,566GW in 2012 to 3,203GW by 2025 delivering an average annual growth rate of 5.7 per cent. The company said the rapid expansion of the market was being driven by a combination of falling technology costs and support policies, noting that in recent years the number of countries providing supportive policies for renewable energy developers has increased from 50 to over 130. The report also suggested that solar, wind and hydroelectric projects will continue to dominate the renewables market. Solar PV technologies are expected to account for 33.4 per cent of new renewable energy capacity between 2012 and 2025, while wind is expected to account for 32.7 per cent and hydro power is due to provide 25.3 per cent. In total, the company expects to see over 668GW of solar PV capacity online in 2025, alongside 814GW of wind capacity, and 1,498GW of hydro capacity. Other renewable energy technologies, such as biomass, geothermal, and marine energy, are expected to provide just 8.6 per cent of new capacity. Frost & Sullivan industry director Harald Thaler said a combination of falling subsidies in industrialised economies and the relatively high economic growth rates enjoyed in emerging economies mean developing nations are likely to play an increasingly important role in the global market.

### **Nissan Plans 1,000 New Stations to Quickly Charge Electric Cars**

[New York Times, Jan. 26] WASHINGTON — Nissan said it would help open about 1,000 high-speed charging stations for [electric vehicles](#) between now and April 2016. Days earlier, BMW and Volkswagen announced a joint effort to build 100 high-speed public charging stations along heavily trafficked corridors on the East and West Coasts. Nissan did not disclose where the chargers would be built, but the company will probably focus its efforts on the nation's largest metro areas, said Brendan Jones, Nissan's director of electric vehicle sales and infrastructure deployment. High-speed chargers can fill up a vehicle's battery in roughly 20 to 30 minutes.

### **NREL Reports Examine Economic Trade-offs of Owning Versus Leasing a Solar Photovoltaic System**

[NREL.gov website, Jan. 21] Two new reports from the Energy Department's National Renewable Energy Laboratory (NREL) examine the economic options customers face when deciding how to finance commercial or residential solar energy systems. NREL analysts found that businesses that use low-cost financing to purchase a photovoltaic (PV) system and homeowners who use solar-specific loans can save up to 30 percent compared with consumers who lease a PV system through a conventional third-party owner. The first report, "[Banking on Solar: An Analysis of Banking Opportunities in the U.S. Distributed Photovoltaic Market](#)," provides a high-level overview of the developing U.S. solar loan product landscape. The analysis covers the range of consumer and commercial loan products available for financing solar in the United States, discusses the potential and active market players in the distributed solar loan space, and provides qualitative and quantitative analyses of how solar loans of varying maturities stack up against third-party financing. Key findings include...

### **Study Finds Global Opportunities for Greater Elevator Efficiency**

[American Council for an Energy-Efficient Economy, Jan. 27] CHICAGO —More energy-efficient elevators can significantly reduce the costs of operating a building, but the information needed to help building owners identify the appropriate elevator system—and the savings associated with it—aren't readily available, according to a [new study](#) published by a leading policy group. The study, by the American Council for an Energy-Efficient Economy, was published with the support of [UTC Building & Industrial Systems](#), the parent organization of [Otis](#), the world's largest manufacturer and maintainer of people-moving products. Elevators and escalators make up 2 to 5 percent of the energy used in most buildings, but can reach as high as 50 percent during peak operational times. At 5 percent, that means the yearly energy consumption of U.S. elevators is approximately five times of that used in all of Washington D.C. The technology exists today to reduce that consumption by 40 percent or more, especially by cutting energy use between trips, when an elevator is idle, according to the study. Some technologies have been found to reduce

consumption by as much as 75 percent, but without a standard way to measure energy savings and a rating system to distinguish more efficient elevators, building owners may be unaware of the benefits of upgrading to a more efficient system or choosing a more efficient system for new construction. "Enhanced visibility when it comes to elevator efficiency can help customers grasp the full value package of better controls, improved performance, reduced sound, and increased comfort," said Harvey Sachs, ACEEE senior fellow, and the study's lead author. Sameer Kwatra of ACEEE presented the study on Tuesday, January 27 at the 2015 American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Winter Conference in Chicago. The study lays out a framework for industry leaders to set common standards for measuring elevator efficiency. Those standards could lead to a rating system, such as the U.S. [Environmental Protection Agency's ENERGY STAR®](#) ratings already in place for heating, ventilating and air-conditioning systems, and many home appliances. Clear standards also could lead energy utilities and government agencies to offer incentives, such as rebates, for very efficient models. And building label programs, such as the U.S. [Green Building Council's LEED®](#) program, could include elevator efficiency as a factor in certifying buildings. Right now, the LEED program considers elevators a part of unregulated "process loads," and there are no direct credits for installing more efficient systems.

## ENERGY/GENERAL

### [How These Energy Geeks Are Re-Imagining an Old School Utility](#)

[Reuters, Jan. 27] Orange County, CA – Welcome to the utility industry's future - or at least that's what Southern California Edison is hoping. Here in a non-descript, 53,500-square-foot building, the \$12 billion utility's research team is testing everything from charging electronic vehicles via cell phone to devices that smooth out the power created by rooftop solar panels. Those are some of the roughly 60 projects in the works at Edison's Advanced Technology division. It has a small \$19 million annual budget, but its influence far exceeds that. The engineers from California's largest utility are hatching plans to insure its survival - and maybe even the survival of the nation's other big utilities, which are watching the project closely. The lab was formed by Southern California Edison in 2009 after California passed a landmark law to lower its greenhouse gas emissions to 1990 levels - and source one third of its electricity from renewable sources by 2020. The result has been more [electric vehicles](#) here in the Golden State. And more solar and wind power, which has got the state's utilities, and those nationwide, scrambling to adapt. Unlike traditional electricity, power from solar and wind sources fluctuates depending on the weather, making it tricky to manage on the grid. Also the cost of [solar power](#) has come down so much that more homeowners are producing their own power and paying less to their utility. Simply put: long term, utilities will need new sources of revenue. In 2013, California's three largest utilities sourced nearly 23 percent of their power from renewable sources, and Gov. Jerry Brown has called for a target of 50 percent by 2030. Twenty nine states have laws requiring more renewables, according to North Carolina State University's Database of State Incentives for Renewables & Efficiency. With so much "distributed" energy on the grid now, mainly from solar panels, says Accenture, the utility industry could see revenues fall by between \$18 billion and \$48 billion a year by 2025. That's why some call it the utility "death spiral."

### [Jobs Strategy Council To Focus on Skills Gap in Energy Workforce](#)

[Fierce Energy, Jan. 26] The recently announced creation of the Jobs Strategy Council (JSC) by the U.S. Department of Energy (DOE) will build upon an effort laid out by President Obama in his State of the Union Address just days ago to accelerate job growth in American-made clean energy sources. The plan is to empower working Americans with the education and training they need to earn higher wages and to encourage businesses to innovate and create good, high-paying jobs. The JSC will integrate the DOE's research, technical and economic resources to respond to the workforce and economic development needs of the energy industry. Increased demand for STEM (science, technology, engineering and mathematics) jobs and an aging energy workforce throughout many energy sectors has created a skills gap that the JSC will work to address through partnerships with the private sector, community college systems, union apprenticeship programs, and other educational institutions. The Council will also assist the private sector, municipalities and states with the development of a resource tool kit and workshop materials that instruct states on how to access the Department's technical knowledge and funding opportunities to create state-based energy jobs plans.

### [Oil Prices Surge 8% After Long Slide Down](#)

[New York Times, Jan. 30] HOUSTON — Oil prices suddenly spiked more than 8 percent on Friday, in the biggest one-day price move for the volatile commodity in nearly three years. But

most energy experts said it was too soon to say whether any meaningful shift was underway. Traders and energy experts said the sudden move up — after oil prices had plummeted by more than 50 percent since June — could be explained by various factors, including reports that the Islamic State terrorist group was advancing in an offensive near Iraq's northern oil fields. The sharp rise came in the final 45 minutes of the trading day, with the West Texas Intermediate benchmark rising just over \$3.71 to \$48.24 a barrel. The global Brent benchmark rose to above \$50 — still a long way from the \$100-a-barrel levels energy executives have grown accustomed to in recent years.

#### [With Oil Revenue Dropping, Mexico Announces Budget Cuts](#)

[New York Times, Jan. 30] MEXICO CITY — Faced with declining prices for its oil exports, Mexico's government announced \$8.3 billion in budget cuts, slashing the budget of the state oil company. It also effectively canceled a bullet train project at the center of a conflict-of-interest scandal that has weakened Enrique Peña Nieto's presidency. Finance Minister Luis Videgaray said the cuts were aimed at strengthening confidence in public finances at a time when flows to emerging markets are declining. "We must act preventively today," Mr. Videgaray said. Concern over falling oil prices has been putting pressure on the peso, which has dipped sharply over the past month. Taxes on the oil company Pemex are the biggest single source of revenue for the government, accounting for about a third of federal spending. The 2015 budget was based on the price of oil at \$79 a barrel, and the price of Mexican crude has fallen to just over \$40 a barrel now. But at the same time, the biggest share of the cuts announced on Friday, almost half, will fall on Pemex.

## INDUSTRIES AND TECHNOLOGIES

#### [Ford, Nest, The Internet of Things: Can Mobility Merge with Smart Energy?](#)

[GreenBiz.com, Jan. 28] Driving isn't what it used to be. Between shifting auto markets, mounting anxiety about carbon emissions and demographic megatrends such as global urbanization, the fundamental value proposition for automakers is changing. From sensor-equipped connected cars wired to generate massive amounts of data to budding infrastructure for electric vehicles or ever-closer-to-market self-driving cars, auto hardware is evolving fast. On the other end of the spectrum, there's also new competition for the traditional model of personal car sales, most notably in the form of cash-rich, software-based ridesharing or carsharing companies. The potential to reduce carbon emissions is massive for each technology: Big Data analytics could be employed to [disincentivize driving at peak times](#); ridesharing could be leveraged to [decrease solo driver trips](#); new "last-mile" solutions could be implemented to bridge the enduring gaps between cars and public transit. Still, huge obstacles remain to realize any of that potential at scale. Data privacy and security, evolving regulatory frameworks and safety when employing technology on the road are all moving targets. The common denominator to help connect the dots between all of these disparate developments: Data. "It's all gonna be about how we all can share data, and how we can do that in a productive and private way," Mike Tinskey, Ford Motor Co.'s global director of electrification and infrastructure, told GreenBiz. Increasing connectivity opens the door not only for vehicle-to-vehicle communication that could cut down on traffic, but really for a new array of vehicle-to-you-name-it communications. Cars increasingly are integrated with smartphones and cloud entertainment systems, but it's not hard to imagine a scenario where everything from consumer electronics such as wearable devices to "smart city" infrastructure [are somehow connected to our cars](#). "That's sort of a limitless point once everything is connected," Tinskey said, deeming such a scenario "sort of the nirvana of [the Internet of Things](#)." Ford's new target in that realm happens to be another field undergoing fundamental changes in delivery models — energy, and not in the way you might expect for a car company.

#### [Hawaii's Solar Push Strains the Grid](#)

*Kauai's utility takes a second stab at battery storage as solar heads toward 80 percent of peak power.*

[MIT Tech Review, Jan. 20] The prospect of cheaper, petroleum-free power has lured the [Kauai Island Utility Cooperative](#) (KIUC) to quintuple utility-scale solar capacity over the past year, building two 12-megawatt photovoltaic arrays. These facilities are the biggest and a significant contributor to the island's 78-megawatt peak power supply. When the second plant comes online this summer, peak solar output on Kauai will approach 80 percent of power generation on some days, according to Brad Rockwell, the utility's power supply manager. That puts Kauai on the leading edge of solar power penetration, and KIUC has bruises to show for it. Power fluctuations from a first large plant installed in 2012 have already largely burned out the big batteries installed

to keep solar from destabilizing the island's grid. Now KIUC is taking a second try with batteries and hoping energy storage technology has progressed sufficiently to keep the same problems from recurring. The new system, installed beside the solar farm nearing completion on Kauai's northeast shore, is one of the first commercial installations of grid-scale lithium-ion batteries manufactured by the French battery giant [SAFT](#). The intermittent nature of renewable energy sources like solar power presents a range of challenges to utilities, depending on their grid's size and design. Kauai's difficulty is most acute when clouds drift over a solar plant. That can slash a plant's power output by 70 to 80 percent in less than a minute. If the plant is providing a substantial share of the grid's power, that rapid power loss can cause the frequency of the grid's alternating current to drop well below 60 hertz, damaging customer equipment or even causing a blackout. Kauai's first energy storage system, at the six-megawatt photovoltaic plant at Port Allen on Kauai's west side, was designed to mitigate such "frequency droops" by releasing stored power when output crashed. But when the plant went live in December 2012, Rockwell and his engineers quickly discovered that, as Rockwell puts it, the battery is "just not what it was cracked up to be."

#### [New Technology To Manage Mining Water and Energy Use](#)

[Mining Innovation News, Jan. 27] The University of Arizona has [developed](#) a new technology solution to manage the evaporation of water from mining tailings ponds and reservoirs, whilst generating additional energy reserves through solar panels. Researchers identified the scarcity of water for operations, the high cost of replacement resources and of energy in mining operations in remote locations or with unfavourable climates. The technology is also hoped to reduce the environmental impact of mining projects. The Hexocover consists of individual hexagonal plastic panels, that can be arranged to fit individual water surface dimensions, which form a cover over the water to slow the evaporation process and can be fitted with solar cells to simultaneously generate electricity. The panels are fitted with a propulsion system and GPS to allow remote configuration and for the cover to move easily when the water reserves are re-filled. Hexocover has been developed by Moe Momayez in the Department of Mining and Geological Engineering in the University of Arizona College of Engineering and Nathan Barba, managing partner at RePower Design.

#### [Resurrecting a Meltdown-Proof Reactor Design](#)

*A new molten salt nuclear reactor design could make nuclear power safer and more economical.* [MIT Tech Review, Jan. 22] A new take on an old reactor design could make nuclear power cleaner and safer, and therefore more competitive with fossil fuels. [Terrestrial Energy](#), a startup in Ontario, Canada, is commercializing the reactor design, which is based on work done at Oak Ridge National Laboratory in Tennessee. Terrestrial plans to start licensing the design in Canada later this year. Terrestrial is designing a reactor that uses molten salt rather than water as a coolant. Researchers at Oak Ridge have demonstrated and tested various molten salt reactors over the past several decades. Terrestrial has modified one of these designs in ways it says will make the technology cheap enough to deploy. Conventional nuclear reactors cost far more to build than fossil-fuel power plants in large part because of safety regulations stipulating costly redundant pumps, containment structures, and other parts. Terrestrial CEO Simon Irish says the molten salt design could make it possible to simplify and reduce the cost of safety systems. In molten salt designs, if the power goes off or the reactor is damaged, the system will cool off on its own without allowing radioactivity to spread. Conventional nuclear reactors must be actively cooled, with water continuously pumped through them. If the pumps stop, the fuel starts to overheat, which can lead to the release of radioactive materials into the environment.

#### [U.S. Solar Manufacturing Rising on the Horizon](#)

[Associated Press, Jan. 30] It's been a great year for the solar energy industry. By the end of 2014, solar deployment is slated to be up nearly 40% over 2013. Today, the booming demand for solar energy supports more than 173,000 jobs and the U.S. has become the third largest solar market in the world. You can find solar energy atop your neighborhood big box store, powering a Las Vegas casino, in the middle of the desert or on your own roof. The latest good news comes from the solar manufacturing sector. In the past nine months, U.S. solar manufacturing has shown unmistakable signs of growth. Strong market demand in the U.S. has attracted some solar manufacturers stateside and as market demand grows, the Energy Department's investments in this sector have begun to bear fruit. Three solar manufacturing companies that have received research and development funding from the Department's SunShot Initiative have recently announced new factories or factory expansions in the U.S. These include a new 200 megawatt plant that is up and running in Michigan and an expansion of an Oregon manufacturing facility, with plans to create 200 new jobs there. A third company just broke ground on a 1 gigawatt

capacity factory in New York. This manufacturer has found U.S. partners and market conditions favorable enough to aim for a U.S. plant that is two orders of magnitude larger than originally planned. SunShot also supports companies that are manufacturing other solar system components like solar cell measurement tools and PV-ready electric meter collars in the U.S. These companies have leveraged SunShot's support to develop innovative and advanced manufacturing processes from differentiated technology design to automation in order to establish a competitive advantage needed to make these new facilities a reality here at home.

## LEGISLATION AND REGULATION

### [Energy Storage Safety Plan Addresses Gaps in Codes, Standards, and Regulations](#)

*Near-term goals of DOE's Strategic Plan for Energy Storage Safety include development of codes, standards and regulations that enable the deployment of safe energy storage systems in a comprehensive, non-discriminatory, institutionally efficient manner.*

[Renewable Energy World, Jan. 19] The U.S. Department of Energy (DOE) Office of Electric Delivery and Energy Reliability's (OE) recently released "Strategic Plan for Energy Storage Safety" is helping industry stakeholders and regulators address a significant gap in safety codes, standards and regulations (CSRs) for grid-scale energy storage technologies, according to Vincent Sprenkle, chief engineer, electrochemical energy storage and conversion, Pacific Northwestern National Laboratory. A rapidly growing number of energy storage installations and the regulatory mandates for energy storage use and development inspired the OE's initiative to address the issue and create the strategic plan, Imre Gyuk, OE energy storage program manager, said during a Jan. 14 webinar on the strategic plan hosted by the Clean Energy States Alliance. There are currently more than 1,200 projects in the global energy storage database, with a significant number of those projects located in California, New York and Texas, he said. The OE released the strategic plan on Dec. 23, 2014, as a high-level road map that will help the industry enable the safe deployment of energy storage by identifying the current state of safety issues and the desired future state of those issues. Recommendations in the strategic plan are based on the input of the participants of an OE workshop for grid energy storage safety conducted last October.

### [FERC Chair Says EPA CO2 Plan Will Affect Infrastructure Planning](#)

The Environmental Protection Agency (EPA) [Clean Power Plan](#) will have a big impact on infrastructure planning [Federal Energy Regulatory Commission \(FERC\) Chairman Cheryl LaFleur](#) told a Washington, D.C. gathering at the National Press Club on Jan. 27. FERC has had a "steady stream" of comments on how EPA's plan to have states curb [carbon dioxide \(CO2\) emissions](#) by 30% might affect reliability of the nation's electric grid, LaFleur said. FERC has heard a wide variety of viewpoints, from parties "who say that the lights will go out" to those who think the EPA rule didn't go far enough. FERC is not an environmental regulator, LaFleur said. Nevertheless, FERC has role to play. This role includes working with infrastructure, markets and being an honest broker for discussion of issues, LaFleur said. On the "honest broker" role, LaFleur said she believes FERC has done a good job with the reliability implications of the mercury and air toxics standard (MATS) policy from EPA. FERC will soon start holding several days of hearings on the reliability issues posed by the EPA CO2 plan. "Reliability, cost and the environment," are the three chief values that must be balanced in the energy sector, LaFleur said. FERC has become a forum for balancing such issues, "whether they are in our jurisdiction a little bit or a lot," LaFleur said. "We work on the unsexy underbelly of every energy issue," LaFleur said. "Letting the lights go out is not going to be an option," she said. The FERC chairman said that EPA's plan is certain to stimulate more spending on both natural gas and electricity infrastructure, she said. In addition, the plan is certain to trigger more reliance on natural gas power plants. This includes both existing gas plants and, in all likelihood, new natural gas plants, LaFleur said. This means construction of both new natural gas pipelines and compressor stations. Pipelines especially have become increasingly controversial issues, LaFleur said.

### [Rep. Gosar Introduces Bipartisan Bill to Protect U.S. Waters from Federal Overreach](#)

[[www.gosar.house.gov](http://www.gosar.house.gov) website, Jan. 28] WASHINGTON, D.C. - Today, U.S. Congressman Paul A. Gosar, D.D.S. (AZ-04) released the following statement after introducing H.R. 594, the Waters of the United States Regulatory Overreach Protection Act, which garnered 114 bipartisan cosponsors in less than 48 hours. This bill would prevent the EPA (Environmental Protection Agency) and other federal agencies from improperly expanding the Clean Water Act (CWA) and seizing jurisdiction over water that is currently under control of states and private ownership:...

### [Senate Approves Keystone Pipeline Despite Veto Threat](#)

[USA Today, Jan. 29] The Senate voted Thursday to build the controversial Keystone XL pipeline, despite a long-standing veto threat from the White House. After three weeks of debate on 41 amendments, the Senate voted 62-36 to pass a bill approving the north-south pipeline for Canadian oil that Republicans say will create thousands of U.S. jobs. But the tally was short of the 67 votes the Senate would need to override a presidential veto.

## **WESTERN POWER**

### [Energy: New Southwest Power Line To Boost Production, Distribution of Renewable Energy](#)

*'The SunZia transmission line will finally unlock New Mexico's stranded wind and solar resources and move that energy to market'*

[Summit County Voice, Jan. 27] FRISCO — A \$2 billion, 550-mile transmission line project will bolster the U.S. energy grid's capacity to use power generated from renewable sources in the Southwest, Obama administration leaders said as they announced approval for the [SunZia Southwest Transmission Project](#). The line will run from the proposed SunZia East Substation in Lincoln County, New Mexico, to the existing Pinal Central Substation in Pinal County, Arizona. "The SunZia Project will help unlock the abundant renewable energy resources in the Southwest, creating jobs and bringing reliable, sustainable power to a growing corner of our country," said Interior Secretary Sally Jewell. "The SunZia power line makes America stronger," said Assistant Secretary of the Army Hammack. "It allows for the more rapid uptake of vital renewable energy, stimulates jobs, and preserves mission capability at White Sands Missile Range, one of the most unique training and testing facilities in the world." The SunZia Project is one of six priority projects of the [Obama Administration's Rapid Response Team for Transmission](#), which works to improve the overall quality and timeliness of permitting for electric transmission infrastructure. When built, these projects will help increase electric reliability, integrate new renewable energy into the grid, and save consumers money. SunZia is the first of the priority projects approved in its entirety in the West by the BLM.

### [Landfill Could Be One of Last to Tap Methane for Power](#)

[New York Times, Jan. 22] Irvine, CA — When most Californians think about the source of renewable energy flowing into their homes, they picture [wind turbines](#) and solar panels — not garbage. The little-known source of electricity has fed California's power grid for decades, but a groundbreaking Thursday for yet another trash-driven power project at a massive Orange County landfill could be one of the last on the books. With the evaporation of tax credits and grants, and dropping [natural gas](#) prices, the waste pit near Irvine is one of the last in the nation that's large enough to generate enough power to be profitable. "A lot of the good sites have been picked through and are under contract or have projects already," said Chris Davis, vice president of development at Pittsburgh-based Montauk Energy, which is building the project. "This one is one of the last of the large sites in California, and one of the last of the large sites in the nation." The \$60 million plant is expected to generate 20 megawatts of electricity when it opens in a year — enough to power 18,500 homes — and will be about five times bigger than most garbage-to-power projects. There are currently 62 landfills in California that produce electricity using the methane that comes from naturally decomposing organic waste. Three plants are under construction, and five are in the planning process. The U.S. Environmental Protection Agency has identified 371 landfills around the nation that could be used for similar projects, but advocates in the renewable-gas industry believe only 5 percent of those will be built.

### [New Mexico Drought Forum Examines Impact of Drought on Tourism, Recreation](#)

[Western Governors' Association, Jan. 28] The latest meeting of the [Western Governors' Drought Forum](#) in Santa Fe, N.M., highlighted the challenges that drought presents to recreation and tourism, as well as success stories. Keith Gardner, Chief of Staff for New Mexico Gov. Susana Martinez, delivered opening remarks on Wednesday (Jan. 28) at "Drought Impacts and Solutions for the Recreation and Tourism Sector," at Inn at the Loretto in Santa Fe. Gardner noted that the [New Mexico Drought Task Force](#) launched by Gov. Martinez has been focusing on four areas: drinking water, agriculture, watershed health, and recreation & tourism. In addition, Gardner said that in 2014 Gov. Martinez directed \$89 million toward upgrading state water infrastructure projects, the largest investment in water in state history. The gathering organized by the Western Governors' Association (WGA) is the fifth held as part of the [Drought Forum](#), the Chairman's Initiative of Gov. Sandoval, who is WGA's Chairman.

### [What Is Community Solar? It's Coming To California](#)

[Forbes, Jan. 30] Pacific Gas and Electric Co. just received [regulatory approval](#) to offer its

customers an option to buy enough solar energy to account for 100% of their electricity needs. It's part of a statewide effort to provide clean energy to Californians who aren't able to own or lease their own rooftop solar panels. San Francisco-based PG&E plans to start signing up customers in the fourth quarter of this year. The utility will buy solar energy from owners of solar power projects that range from 0.5 to 20 megawatts and are located within the PG&E's territory, said Jonathan Marshall, a PG&E spokesman. What PG&E will carry out is commonly called community solar, which refers to a type of project built to allow a group of people to own a stake or subscribe to its energy output and see their purchases reflected on their utility bills. The concept [isn't new](#) but occupies only a small slice of the solar energy market. States often need to modify their regulations to make community solar an option. Colorado [passed a community solar bill](#) in 2010. California passed its own community solar bill, [SB 43](#), in 2013. The statewide program aims to deliver 600 megawatts of solar energy to the customers of the three investor-owned utilities, which also include Southern California Edison and San Diego Gas & Electric. It's set to sunset by the end of 2018. The California Public Utilities Commission [approved the criteria for carrying out the program](#) yesterday. Edison and San Diego should start to sign up customers in late 2015 or early 2016. The program targets mostly renters or others who don't have suitable roofs because of the roofs' structural integrity or the amount of sunlight they get. Although the bill says the program could include several types of renewable energy, in reality solar is expected to be the main attraction.

#### [Worry for Solar Projects After End of Tax Credits](#)

[New York Times, Jan. 25] For more than a year now, an enormous solar thermal power plant has been humming along in the Arizona desert, sending out power as needed, even well after sunset. The plant, called Solana, was developed by the Spanish energy and technology company Abengoa and has succeeded in meeting an elusive solar goal — producing electricity when the sun is not shining — and displacing fossil-fuel-based power in the grid. “With the sun going down at 6 or 7 o'clock at night, all the other forms of solar production are essentially going to zero,” said Brad Albert, general manager for resource management at Arizona Public Service, the state's main utility, “while Solana is still producing at full power capability. It just adds a whole lot of value to us because our customer demand is so high even after the sun goes down.” Indeed, Abengoa opened another mammoth plant on Friday in the Mojave Desert in California that uses a similar approach. But despite the technology's success, Abengoa and other developers say they do not have plans at the moment to build more such plants in the United States. And that is largely because of uncertainty surrounding an important tax credit worth 30 percent of a project's cost. Although the subsidy, known as the Investment Tax Credit, is to remain in place until the end of 2016, when it will drop to 10 percent, that does not give developers enough time to get through the long process of securing land, permits, financing and power-purchase agreements, executives and analysts say. “It is difficult to start construction of new facilities until there is clarity,” said Santiago Seage, chief executive of Abengoa Yield, a publicly traded subsidiary created last year to own and manage power plants. But the difficulty is not because of any shortcomings in the technology. The Solana plant uses a network of parabolic mirrors that focus sunlight on pipes that carry the heat to tanks of salt. It can stay there for up to six hours until the plant pulls it out to make steam for electricity. A result is a source of power that can help a utility smooth variations in output from renewable power sources like solar and wind. The Mojave plant, which does not include the molten salt storage, is expected to supply enough power for 91,000 homes throughout Northern and Central California, under a long-term contract with Pacific Gas and Electric. Ken Johnson, chief spokesman for the Solar Energy Industries Association, the main solar trade group, said that his group planned to lobby Congress to extend the credit beyond 2016. “That's our top priority for this session of Congress,” he said, adding that developers across the solar industry were “trying to do as much as possible before it drops to 10 percent in 2017.” In addition to the tax credit, the existing solar thermal plants have benefited from heavy government support in the form of loan guarantees — \$1.2 billion in the case of the Mojave plant — but that program is no longer active. As a result, utility-scale development, which accounted for almost two-thirds of the nation's solar capacity installed last year, according to industry estimates, could drop off.

## **ARIZONA STATE INCENTIVES/POLICIES**

### **ARIZONA COMMERCE AUTHORITY (ACA)**

- **INCENTIVES**

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to

support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
  - Quality Jobs
  - Qualified Facility
  - Computer Data Center Program
  - Research & Development
  - Foreign Trade Zone
  - Military Reuse Zone
  - Angel Investment
  - Renewable Energy Tax Incentive
  - Healthy Forest
  - Sales Tax Exemption for Machinery and Equipment
  - Lease Excise
  - Additional Depreciation
  - Work Opportunity
  - Commercial/Industrial Solar
  - SBIR/STTR
  - Private Activity Bonds
  - QECB's
- **(ACA) PROGRAMS**
  - **DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)**
  - Arizona Incentives/Policies
  - Federal Incentives/Policies
  - Solar Policy News
- DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

## GRANTS

**NEW!** Students – Geothermal Resources Council (GRC) – The GRC presents news and information for students in the global geothermal community. There are some great opportunities for student scholarships in geothermal. For more information, visit the link below. You will find "Scholarships" half way down the page.

Website: <http://www.geothermal.org/students.html>

The following solicitations are now available:  
(Click on title to view solicitation)

- [Building America Industry Partnerships for High Performance Housing Innovation](#)  
Funding Opportunity #: [DE-FOA-0001117](#) Close Date: 02/04/2015
- [Choice Neighborhoods Implementation Grant Program \(FR-5800-N-11\)](#) – Application Due Date: Feb2/09/2015
- [Buildings University Innovators and Leaders Development \(BUILD\) - 2015](#) – Close Date 02/11/2015
- [Powering Agriculture: An Energy Grand Challenge for Development \(AID-SOL-OOA-00005\)](#) – Applications accepted between 12/7/2014 through 2/12/2015
- [Advanced Research in Dry-Cooling \(ARID\) \(DE-FOA-0001197\)](#) – Applications due 2/13/2015
- [Infrastructure Management and Extreme Events \(PD-15-1638\)](#) – Application Due Date: 2/17/2015
- [National Institute of Food and Agriculture Tribal Colleges Research Grant \(USDA-NIFA-TCRGP-004795\)](#) – Applications due 2/20/2015

- [DE-FOA-0001201: Fiscal Year \(FY\) 2015 Vehicles Technologies Program Wide Funding Opportunity Announcement](#) – Concept Paper Submission Deadline: 2/26/2015 8:00 PM ET, Full Application Submission Deadline: 4/10/2015 8:00 PM ET
- [DE-FOA-0001261: OPEN 2015](#) – Submission Deadlines: Notice of Intent Deadline: 2/20/2015 5:00 PM ET, Concept Paper Submission Deadline: 2/27/2015 5:00 PM ET, Full Application Submission Deadline: TBD
- [Thermal Transport Processed \(PD-14-1406\)](#) – Application due 2/20/2015 and 10/20/2015
- [Student Program for Environmental Excellence in Design \(SPEED\) \(EPA-OAR-OTAP-15-02\)](#) – Application Due Date: 2/22/2015
- [U.S. Department of Agriculture – Phase II \(USDA-NIFA-SBIR-004815\)](#) – Applications due 2/26/2015
- [The Resilient Electricity Delivery Infrastructure \(REDI\) Initiative \(DE-FOA-0001219\)](#) – Application Due Date: 3/04/2014
- [EPA-EE-14-02 - Environmental Education Local Grants Program](#) – Close Date: 3/06/2015
- [Physics of Reliability: Evaluating Design Insights for Component Technologies in Solar 2 \(PREDICTS2\)](#) – Close Date: 3/12/2015
- [Sustainable and Holistic Integration of Energy Storage and Solar PV \(SHINES\)](#) Close Date: 3/19/2015
- [Desalination and Water Purification Research and Development \(DWPR\) \(R15AS00019\)](#) – Application Due Date: 4/27/2015
- [Desalination and Water Purification Research and Development \(DWPR\) Pilot \(R15AS00021\)](#) – Application Due Date: 4/27/2015
- [American Apprenticeship Initiative \(FOA-ETA-15-02\)](#) – Application Due Date: 4/30/2015
- [Flexible Hybrid Electronics Manufacturing Innovation Institute Grant \(BAA-RQKM-2015-0014\)](#) – Applications due 5/29/2015
- [Advanced Frontiers in Renewable Hydrogen Fuel Production via Solar Water Splitting Technologies](#) – Letter of Intent due 10/7/2015
- [Land and Water Conservation Fund State and Local Assistance Program](#) – Application Due Date: 08/11/2015
- [Landscape Design for Sustainable Bioenergy Systems \(DE-FOA-0001179\)](#) – Concept Paper due 11/21/2015
- [Repowering Assistance Program](#) - Ongoing
- [Rural Business Enterprise Grants](#) - Ongoing
- [Rural Business Opportunity Grants](#) – Ongoing
- [Sunshot Catalyst Prize \(DE-FOA-0001126\)](#) - Applications Accepted on a Continuous Basis - The U.S. Department of Energy SunShot Catalyst is an open innovation program that allows the public to rapidly create and develop products and solutions that address near-term challenges in the U.S. solar marketplace through prize challenges.

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|  | <ul style="list-style-type: none"><li>• Sustainable Agriculture Research and Education Grants - Ongoing</li><li>• Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines</li><li>• U.S. Dept. of Agriculture - Rural Development Grant Assistance</li><li>• Green Refinance Plus – Ongoing</li><li>• National Science Foundation Funding Opportunities</li></ul> |
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